BULLETIN
OF THE
CHEMICAL SOCIETY OF JAPAN

Volume 30

1957

Sin'iti KAWAI, Editor
Kazuo SAITO, Assistant Editor

Editorial Board

Rempei GOTOH
Yoshikazu HACHIHAMA
Hiroshi HAMAGUCHI
Yoshio IWAKURA
Kunio KOZIMA
Noboru NAGASAKO
Eiji NIKI
Hiroshi NOZAKI
Seizo OKAMURA
Tunetake SASAKI
Shinichi SHIBUYA
Mutsuaki SHINAGAWA
Tatsuo TAKESHIMA
Nobuyuki TANAKA
Sumio UMEZAWA
Yoshiyuki URUSHIBARA
Tokunosuke WATANABE
Kazuo YAMASAKI

Published by

The Chemical Society of Japan

5, 1-Chome, Surugadai-Kanda, Chiyodaku, Tokyo

QD 1
C54
v.30

CONTENTS OF VOLUME 30, 1957

No. 1

General and Physical

H. MIYAMA: A Thermistor Method for the Determination of Velocity Coefficients of Vinyl Polymerization. IV 10

T. ISHIGURO, T. CHIBA and N. GOTOH: Studies on the Dipole Moments of Acenaphthene and its Derivatives. 25

S. KATO and M. KOIZUMI: Studies on the Organic Phosphorescence. II. A Revision of Lewis' Mechanism for the Phosphorescence. 27

S. KATO: Studies on the Organic Phosphorescence. III. Quenching by Some Gases and Vapors. 34

S. KATO, K. KIMURA and M. KOIZUMI: Studies on the Organic Phosphorescence. IV. Quenching by Inorganic Salts. 38

K. AOKI and Y. SUZUKI: Interaction between Surface Active Agents and Proteins. IV. Heat of Interaction of Sodium Dodecyl Sulfate and Egg Albumin. 53

T. YOSHIMOTO and Y. MASHIKO: Studies on Azeotropic Mixtures. II. Constancy of Molecular Interchange Energies in Homologous Azeotropic Series and Calculation of Azeotrope-forming Range. 56

Y. SASADA and I. NITTA: A Refinement of the Crystal Structure of Tropolone Hydrochloride. 62

V. K. VENKATESAN and C. V. SURYANARAYANA: Electrochemical Study of Ethylene Glycol-Acetic Acid System. 97

M. YOKOI: Electron Diffraction Investigation on the Molecular Structures of Some Organosilicon Compounds. I. 100

M. YOKOI: Electron Diffraction Investigation on the Molecular Structures of Some Organosilicon Compounds. II. 106

Analytical and Inorganic

K. KIMURA and K. SAITO: A Tracer Study on the Penetration of a Sample Solution into Carbon Electrode of Spectrographic Analysis. 1

Y. KOMIYAMA: Structures of the Erdmann's Salt $NH_4[Co(NH_3)_2(NO_2)_4]$ and Some Other Related Nitro-ammine-cobalt(III) Complexes. 13

T. KIBA and I. KISHI: Microcolorimetric Determination of Sulfate by Reduction to Hydrogen Sulfide with Tin(II)-Strong Phosphoric Acid 44

M. VENUGOPALAN and K. J. GEORGE: Bromometric Oxidation of Red Phosphorus by Bromide Bromate Mixtures. 51

K. KIMURA and H. SANO: Studies on the Organic Reagents for the Inorganic Analysis. I. Phenylfluorone as Sensitive Reagent for Colorimetric Determination of Zirconium 80

M. FUJIMOTO: Mikroanalyse mit Hilfe von Ionenaustauschharzen. IX. Über den Nachweis geringer Menge des Wismutes mit Thioharnstoffe. 83

M. FUJIMOTO: Mikroanalyse mit Hilfe von Ionenaustauschharzen. X. Über den Nachweis geringer Menge des Kupfers mit *p*-Phenylendiamin und Ammoniumrhodanid. 87

M. FUJIMOTO: Mikroanalyse mit Hilfe von Ionenaustauscherharzen. XI. Über den Nachweis kleinster Menge des Nickels mit Dimethylglyoxim und Bromwasser 93

Organic and Biological

T. Matsumoto and K. Fukui: Synthetic Studies on the Benzofuran Derivatives. II. Reactions of Aromatic *o*-Hydroxyaldehyde Derivatives and Ethyl Bromomalonate. 3

C. Urakami and Y. Kakutani: The Separation of α-Glycerophosphoric Acid from its β-Isomer by Paper Chromatography 21

Y. Matsushima and N. Fujii: Studies on Amino-hexoses. IV. *N*-Deacylation with Hydrazine and Deamination with Nitrous Acid, a Clue to the Structure of Aminopolysaccharides. 48

S. Hirase: Studies on the Chemical Constitution of Agar-agar. XIX. Pyruvic Acid as a Constituent of Agar-agar (Part 1). Identification and Estimation of Pyruvic Acid in the Hydrolysate of Agar. 68

S. Hirase: Studies on the Chemical Constitution of Agar-agar. XIX. Pyruvic Acid as a Constituent of Agar-agar (Part 2). Isolation of a pyruvic Acid-linking Disaccharidd Derivative from the Methanolysis Products of Agar. 70

S. Hirase: Studies on the Chemical Constitution of Agar-agar. XIX. Pyruvic Acid as a Constituent of Agar-agar (Part 3). Structure of the Pyruvic Acid-liking Disaccharide Derivative Isolated from the Methanolysis Products of Agar. 75

Applied

I. Kamiya: Photo-dichroism of Printed-out Silver. 1. Some Experimental Evidences in Favor of the View that the Photo-dichroism of Printed-out Silver is an Anistropic Herschel Effect. 6

Short Communications

K. Okawa: An Improved Synthesis of *O*-Benzyl-DL-serine. 110

No. 2

General and Physical

N. Inagaki: Note on the Donnan Membrane Equilibrium in Polymer Salt Solutions with Extraneous Salts. 115

S. Shionoya and K. Watanabe: Relationships between the Photolysis and Crystallinity of Zinc Sulfide Phosphors 118

T. Takeuchi and M. Sakaguchi: Adsorption of Hydrogen on Copper-Magnesia Catalysts. 121

T. Hayakawa: The Adsorption of Non-polar Gases on Alkali Halide Crystals. I. The Low-temperature Adsorption of Non-polar Gases on Cubic Sodium Chloride 124

H. Yoneda: The Stabilities of Metal Ammine Complexes. I. The Absorption Spectra of a Series of Hexammine Ni(II) and Tetrammine Pt(II) Complexes. 132

H. Obata and M. Koizumi: Photochemical Reactions between Methylene Blue and Tri-, Di- and Monomethylamine. I. 136

H. Obata and M. Koizumi: Photochemical Reactions between Methylene Blue and Tri-, Di- and Monomethylamine. II. 142

H. Baba: Correlation between Two Molecular Orbital Theories on Organic Reactions. I. Ionic Substitutions. 147

H. Baba: Correlation between Two Molecular Orbital Theories on Organic Reactions. II. Radical Substitution. 154

K. Nakatsu, M. Shiro, Y. Saito and H. Kuroya: Studies on Crystals of Metallic Tris-ethylenediamine-complexes. II. The Crystal Structure of

Sodium D-Tris-ethylenediamine-cobalt(III) Chloride Hexahydrate, 2D-[Co en$_3$]Cl$_3$·NaCl·6H$_2$O. 158
B. Eda and **K. Ito**: Studies on the Intramolecular Hydrogen Bond in Conjugated Systems by the Measurements of Dipole Moments. II. Salicylaldehyde and *O*-Hydroxyacetophenone. 164
T. Anno, I. Matubara and **A. Sadô**: Electronic States of para-Benzoquinone. I. Calculation of the Energy Levels by a Semi-empirical Molecular Orbital Method Neglecting Configuration Interaction..... 168
T. Takeuchi and **M. Sakaguchi**: The Surface of Copper-Nickel Catalyst. I. The Reaction between Hydrogen Chloride and the Catalyst. 177
T. Takeuchi and **M. Sakaguchi**: The Surface of Copper-Nickel Catalyst. II. Adsorption of Hydrogen on Copper, Nickel, and Copper-Nickel Catalysts. ... 182
H. Sasaki, S. Saito and **H.Okuyama**: The Studies on Micelles. II. The Relation between Surfactant Concentration and Micellar Concentration in Aqueous Surfactant Solutions. 186

Organic and Biological

M. Yamaguchi: On Carotenoids of a Sponge "Reniera japonica". 111

Short Communications

Y. Kotera, M. Yonemura and **T. Sekine**: Dependence of the Characteristics of Calcium Halophosphate Phosphors on the Conditions for Preparing Secondary Calcium Hydrogen Orthophosphate. 191
S. Kanda and **Y. Saito**: Synthesis of Co-ordination Compounds of High Molecular Weight. 192
M. Kashiwagi: Relation between Foaming Properties and the Structure of Surfactant Solution. 193
S.Okumura, M. Masumura, T. Motoki. T, Takahashi and **S. Kuraishi**: Syntheses of Kinetin-analogs. I. 194
M. Kotake, S. Kusumoto and **T. Ohara**: Chemical Structure of Deoxynupharidine, the Alkaloid Obtained from *Nuphar Japonicum* 195
O. Simamura and **Y. Mizuno**: The Competitive Nitration of Biphenyl and Benzene by Nitric Acid in Acetic Anhydride..... 196
M. Yoshida, M. Odajima, K. Tanaka and **K. Yamagata**: Nuclear Magnetic Resonance of Deuterated P. V. A. Films. 197
T. Koide, T. Oda and **I. Nitta**: On the Crystal Structure of 2,2-Dichloro-3,3-dimethylbutane. 198
S. Nishimura and **Y. Urushibara**: A Method for the Preparation of the Raney Nickel Catalyst with a Greater Activity. 199

No. 3

General and Physical

Y. Oda and **T. Yawataya**: On the Distribution and Behavior of Water in Cation-Exchange Resin Membranes. 213
I. Miyagawa, T. Chiba, S. Ikeda and **Y. Morino**: Dipole Moments and Internal Rotation of Some Halogenated Hydrocarbons in the Vapor State..... 218
Y. Morino, I. Miyagawa, T. Chiba and **T. Shimozawa**: Dipole Moment and Internal Rotation of 1,4-Dichloro-2-butyne in the Gaseous State..... 222
T. Chiba, T. Shimozawa, I. Miyagawa and **Y. Morino**: Dipole Moment and Bond Character of Propargyl Halides and Mono- and Di-chlorobutynes ... 223
Y. Matsunaga: Magnetochemical Study of Sydnones..... 227

M. Iwasaki, S. Nagase and R. Kojima: The Molecular Structure of 1,2-Difluoro-1,1,2,2-tetrachloroethane. 230
T. Hayakawa: The Adsorption of Non-Polar Gases on Alkali Halide Crystals. II. Calculations of the Adsorption Behavior of Non-Polar Gases on Cubic Sodium Chloride. 243
M. Imamura: Irreversible Photobleaching of the Solutions of Fluorescent Dyes. IV. Photoreactions in Methanol, Isopropanol and Ketones and the General Conclusion for the Photobleaching of Eosine. 249
S. Sakata and N. Morita: Relative Volatility of H_2O^{16}/H_2O^{18} and Equilibration Time for Fractional Distillation of Water. 254
I. Kamiya: Photo-dichroism of Printed-out Silver. II. Theoretical Consideration of the Mechanism from the Point of View that the Phenomenon of Photo-dichroism would be an Anisotropic Herschel effect. 294
I. Kamiya: Photo-dichroism of Printed-out Silver. III. Absorption Spectra and Dichroism. 298

Analytical and Inorganic

M. Fujimoto: Mikroanalyse mit Hilfe von Ionenaustauscherharzen. XII. Über den Nachweis in Tausendstelgammamenge vorhandenen Nickels mit Rubeanwasserstoffsäure. 274
M. Fujimoto: Mikroanalyse mit Hilfe von Ionenaustauscherharzen. XIII. Über den Nachweis in Tausendstelgammamenge vorhandenen Kobalts mit Nitroso-R-salze 278
M. Fujimoto: Mikroanalyse mit Hilfe von Ionenaustauscherharzen XIV. Über den Nachweis in Tausendstelgammamenge vorhandenen Eisens mit 2,2'-Bipyridyl 283

Organic and Biological

S. Yamana: Molecular Rotations of Glucides in Relation to their Structures. I. The Absolute Configuration of γ-Lactones 203
S. Yamana: Molecular Rotations of Glucides in Relation to their Structures. II. The Conformation and the Absolute Configuration of Aldopyranoses. Physical Meaning of Hudson's Isorotation Rule. 207
H. Kato and M. Ohta: Studies on Meso-ionic Compounds. III. Reactions of 3-Phenyl-4-bromosydnone 210
T. Ando and N. Tokura: Benzylation of Acetylene. 1. Formation of 3,4-Diphenyl-1-butyne and 3,4-Diphenyl-1,2-butadiene. 259
N. Yamada: Hydrogen Exchange and Isotope Effect on the Vinylation of Acetic Acid. 263
S. Umezawa and M. Kinoshita: Studies on Antibiotics and Related Substances. V. Synthesis of 5-Methylenecyclopentanone-3-carboxylic Acid, an Antitumor Isomer of Sarkomycin. 267
C. Araki and K. Arai: Studies on the Chemical Constitution of Agar-agar. XX. Isolation of a Tetrasaccharide by Enzymatic Hydrolysis of Agar-agar. 287

Applied

S. Machida, M. Inano and Y. Matsumura: Chemical Studies on Wood Hemicelluloses. I. On the Hemicellulose of Japanese Beech Wood. I. 201
Y. Tsuda and S. Mukoyama: Effects of Mercerization on the Lateral Order Distribution of Cellulose 271

Short Communicatione

N. Tanaka and T. Koizumi: Polarographic Determinations of Minute Quantities of Lead in High-Purity Electrolytic Zinc Using the Rotated Dropping Mercury Electrode. 303
T. Goto, Y. Hirata, S. Hosoya and N. Komatsu: Structure of Compound A, a Hydrolysis Product of Roseothricin A..... 304

No. 4

General and Physical

Y. Takéuchi and Y. Saito: Structure of Reineckate Complex Ion..... 319
H. Sasaki: Studies on Micelles. III. A Check of the New Conclusion from the Spectral Experiments with the Well-known Experimental Facts of Other Authors. 326
T. Hayakawa: The Adsorption of Non-polar Gases on Alkali Halide Crystals. IV. Calculations of the Adsorption Behaviour of Non-polar Gases on Cubic Potassium Chloride and Cubic Potassium Bromide..... 332
T. Hayakawa: The Adsorption of Non-polar Gases on Alkali Halide Crystals. V. The Low-temperature Adsorption of Non-polar Gases on Cubic Potassium Bromide. 337
T. Hayakawa: The adsorption of Non-polar Gases on Alkali Halide Crystals. VI. The Low-temperature Adsorption of Non-polar Gases on Octahedral Potassium Chloride..... 343
I. Kamiya: Photo-dichroism of Printed-out Silver. IV. An Explanation of Relation betweem Dichroism Curve and Absorption Difference Curve and the Effect of After- and Pre-illumination in Terms of the Theory of Anisotropic Herschel Effect. 350
T. Kuroiwa: Non-Newtonian Viscosity of Dilute High Polymer Solutions. III. On the Method of Measuring Zero Shear Viscosity..... 354
N. Mataga and S. Tsuno: Hydrogen Bonding Effect on the Fluorescence of Some Nitrogen Heterocycles. I. 368
N. Mataga: Note on the Polymerization of Dyes in Solution. 375
J. Higuchi: Primary Process in Photochemical Decomposition of AH_N-Type Molecules..... 382
K. Kuchitsu: An Electron Diffraction Investigation of the Molecular Structure of 1,4-Dichlorobutyne. I. Determination of Bond Distances and Angles.... 391
K. Kuchitsu: An Electron Diffraction Investigation of the Molecular Structure of 1,4-Dichlorobutyne. II. A Study of Internal Rotation by Use of Halos in Small Angle Region. 399
K. Higasi, T. Nozoe and I. Omura: Ionization Potentials of Some Organic Molecules. IV. Troponoid Compounds. 408
M. Shirai and B. Tamamushi: Dielectric Studies on Colloidal Solutions. III. The Mobilities of Micelles of Long-chain Amine Hydrohalides..... 411
H. Ukihashi: Study on the Electric Conductivity of Sodium Silicate Aqueous Solution. II. 414

Analytical and Inorganic

S. Umemoto: Relation between the Contents of Radon and Radium B in Several Radioactive Mineral Springs. 421

Organic and Biological

T. Masamune and M. Koshi: Molecular Compounds between Heterocyclic Compounds Containing Nitrogen. 307

T. Okuda: Amino Acid Synthesis from Nitromalonic Ester. II. Synthesis of Proline and Glutamic-γ-semialdehyde. 358
A. Miyake: Polymorphism of Bis-β-hydroxyethyl Terephthalate. 361
C. Urakami, H. Murahashi and Y. Kakutani: Separation of α-Glycerophosphate from Its β-Isomer by Column Chromatography. 379
K. Nakanishi, T. Goto and M. Ohashi: Infrared Spectra of Organic Ammonium Compounds. 403

Applied

M. Uchida and H. Nagao: Effect of Emulsifier upon the Compositions of Emulsion Copolymers of Acrylonitrile and Water-soluble Monomers. 311
M. Uchida and H. Nagao: Action of Emulsifier upon Compositions of Emulsion Copolymers of Acrylonitrile and Water-insoluble Monomers. 314
M. Nishio: Sorption of Monobasic Dye-acid by Nylon-6 Fibre. 363

Short Communications

K. Tanaka, K. Yamagata, M. Yoshida and M. Odajima: Nuclear Magnetic Resonance of Polyvinyl alcohol. 428
Y. Matsunaga: Diamagnetic Susceptibilities of Azo-derivatives of 2-Naphthol. 429
T. Matsuura: Natural Furan Derivatives. I. The Synthesis of Perillaketone. 430
K. Hata, K. Watanabe and S. Sato: Catalytic Hydrogenation in Vapor Phase Using Urushibara Nickel as Catalyst. 431

No. 5

General and Physical

H. Miyama: A Thermistor Method for the Determination of Velocity Coefficients of Vinyl Porimerization. V. The Effect of the Bulk Viscosity on the Velocity of Vinyl Polymerization. 459
H. Hotta and T. Isemura: Surface Chemistry of High Polymers. VII. Polyacids and Some Vinyl Polymers. 464
H. Ukihashi: A Study on the Electric Conductivity of Sodium Silicate Aqueous Solution. III. On the Relationship between Conductance and Viscosity. 470
T. Sato: Effect of the Addition of Some Carbohydrates on the Decomposition Rate of Sodium Aluminate Solutions with Seeding. 477
K. Shimizu and H. Murata: Normal Vibrations of Tetramethylmethane and Tetramethylmethane-d_{12}. 487
H. Noda: Sedimentation of Spheres in a Suspension of Finite Concentration. 495
R. Soda: The Stretching Vibration of N-H Link of 2-Aminopyridine. 499
T. Yoshimoto: Studies on Azeotropic Mixtures. III. Physical Basis of Azeotropic Correlation Rules. 505
I. Miyasita and K. Higasi: Dielectric Investigation on Coals. I. Dielectric Properties of Japanese Coals. 513
K. Higasi, I. Miyasita and Y. Ozawa: Dielectric Investigation on Coals. II. Mixture of Coal Powder and Paraffin Wax. 546
I. Miyasita, K. Higasi and M. Kugo: Dielectric Investigation on Coals. III. On a Variety of Coals. 550
K. Higasi, Y. Higasi and I. Miyasita: Dielectric Investigation on Coals. IV. Notes on Dipole Moment. 556
S. Shionoya and K. Era: Sensitization by Bismuth of the Luminescence of Manganese and Samarium in Calcium Sulfide Phosphors. 518

H. WATASE, K. OSAKI and I. NITTA: Crystal Structure of a Monoclinic Form of Naphthazarin. 532
M. SHIRAI and B. TAMAMUSHI: Dielectric Studies on Colloidal Solutions. IV. The Dielectric Constant of the Solutions of Long-chain Amine Hydrochlorides. 542

Analytical and Inorganic

M. ISHIBASHI, T. SHIGEMATSU, Y. YAMAMOTO, M. TABUSHI and T. KITAGAWA: Ultraviolet Spectrophotometric Determination of Iron (III) as Chlorocomplex. 433
Y. UZUMASA, M. NISHIMURA and T. SEO: Ultraviolet Spectrophotometric Determination of Iron with Ethylenediaminetetra-acetic Acid. 438
F. EGAMI and N. TAKAHASHI: A Simple Method of Sulfate Microdetermination. 443
T. KIBA, I. AKAZA, née KISHI and S. TAKI: Microcolorimetric Determination of Organic Sulfur by the Tin (II)-Strong Phosphoric Acid Reduction Method. 482
Y. SHIMURA and R. TSUCHIDA: Absorption Spectra of Heteropolyanions. II. The Heteropolytungstates Containing Co(II), Co(III) or Mn(IV) as Central Ions. 502

Organic and Biological

S. OZAKI and T. NAGOYA: On the Thermal Dissociation of Organic Compounds. XII. The Effects of the Substituents on the Thermal Dissociation of Substituted Phenylureas. 444
K. TOKI: Synthesis of *dl*-Sarkomycin (2-Methylenecyclopentanone-3-carboxylic Acid). 450
K. YAMAGISHI, T. TANAKA und T. HOSHINO: Untersuchungen über die photochemischen Additionsreaktionen. IV. Die Anlagerungen von Thioessigsäure an Propargylalkohol und einige Propargylester. 455
T. MASAMUNE: The Exhaustive Methylation of *cis*- and *trans*-Hexahydrocarbazoles. 491
M. ŌKI and T. SATO: Estrogenic Biphenyls. I. 2,3′-Diethyl-4-methoxybiphenyl-4′-carboxylic Acid. 508
T. SUAMI and S. UMEZAWA: Studies on Antibiotics and Related Substances. VI. Configurations of Isomeric O-Methylphenylserines and a New Route for the Synthesis of Chloramphenicol. 537

Applied

K. INOUYE: Size and Structure of Commercial and Graphitized Carbon Blacks by Low- angle X-Ray Scattering and Colloid-chemical Methods. 525

Short Communications

N. SAITO and T. SEKINE: On the Anion-exchange Behavior of Some Quadrivalent Actinide Elements. 561

No. 6

General and Physical

M. KASHIWAGI: Relation between Foaming Properties and the Structure of Surface Active Substances. I. Foaming Properties of Aqueous Soap and Sodium Dodecyl Sulfate. 572

A. KITAHARA: Determination of Critical Micelle Concentration of Detergent in Non-polar Solvent by Ultraviolet Absorption Spectra. 586
H. MATSUO: Crystallinity Studies of Polychlorotrifluoroethylene by Infrared Method. I. Measurement of the Degree of Crystallinity..... 593
H. AKAMATU, Y. MATSUNAGA and H. KURODA: Organic Semiconductors with High Conductivity. II. Structural Aspect of Violanthrene-Iodine Complex... 618
I. OMURA, H. BABA, K. HIGASI and Y. KANAOKA: Ionization Potentials of Some Organic Molecules. V. Heterocyclic Compounds Containing Nitrogen. 633
T. ANNO, M. ITO, R. SHIMADA, A. SADÔ and W. MIZUSHIMA: Relations among Bond Order, Force Constant and Bond Length for the C-C and C-N Bonds in Conjugated Molecules..... 638
M. MARUYAMA and T. FURUYA: Polarography of Bis-(nitrophenyl)-arsinic Acids..... 650
M. MARUYAMA and T. FURUYA: Polarography of Bis-(aminophenyl)-arsinic Acids, Phenylarsonic Acid, and Arsanilic Acids..... 657
S. SAKURABA and S. IKEYA: Studies on the Mechanism of Eder's Reaction. I. Inducing Photochemical Reaction of Manganese (II)-Oxalate System... 662

Analytical and Inorganic

Y. YOSHINO and Y. KURIMURA: Anion Exchange Adsorption of Some Metals from Mixed Solvents..... 563
H. ONISHI: Photometric Determination of Thallium with Rhodamine B. 567
N. YAMAGATA, T. YAMAGATA and S. WATANABE: Coprecipitation of a Trace Amount of Cesium with Thallous Salts..... 577
N. YAMAGATA and S. WATANABE: Carrier-free Separation of Cesium from Fission Products by the Use of Coprecipitation with Thallium(I) Dipicrylaminate. 580
F. AOKI, T. KUROSAWA and S. YAJIMA: Rapid Analysis of Gamma-emitters Using Gamma-Ray Scintillation Spectrometer. I. Quantitative Analysis of ^{134}Cs—^{137}Cs Mixture. 583
S. OHASHI, Y. TAKAYAMA, H. HIGASHIDANI and S. TAKI: Existence of Nitrous Oxide in Gases Produced from Nitrogen Compounds Decomposed by the Strong Phosphoric Acid-Iodic Acid Method 604
Y. TAKAYAMA and S. OHASHI: Decomposition of Pyridine Compounds with Strong Phosphoric Acid-Iodic Acid: Some Information Obtained by Mass Spectrometry 606
S. YAMADA, H. NAKAMURA and R. TSUCHIDA: Spectrochemical Study of Microscopic Crystals. XIV. Absorption Spectra and Structure of Dibenzene-chromium(I) Iodide..... 647

Organic and Biological

Y. TANAKA: Syntheses of 3-Alkyl-naphtho(1.2-b)furan-2-carboxylic Acids..... 575
S. ISEDA: On Mangiferin, the Coloring Matter of Mango (*Mangifera indica* Linn.). IV. Isolation of 1,3,6,7-Tetrahydroxyxanthone and the Skeletal Structure of Mangiferin..... 625
S. ISEDA: On Mangiferin, the Coloring Matter of Mango (*Mangifera indica* Linn.). V. Identification of Sugar Component and the Structure of Mangiferin. 629
Y. HIRUSAWA, M. OKU und K. YAMAMOTO: Neue Synthetische Methode von Tetraphenyl-Phosphoniumhalogeniden..... 667

Applied

Y. TSUDA: A Phase Transition Study on the Mercerization of Cellulose..... 589

Y. Osumi and M. Inoue: Microscopic Studies on Fused Catalysts for Ammonia Synthesis. V. Conversion Test with A and B Constituents and Some Studies on "M" Type Crystal. 598
R. Ōkawara, U. Takahashi and M. Sakiyama: Cyclopolysiloxanes from Cohydrolysis of Dimethyldichlorosilane with Methyldichlorosilane and Ethyldichlorosilane..... 608
K. Ishida: Solvent Selectivity of Liquid Ammonia for Pure Hydrocarbons. Tie-Line Data and Comparison of Selectivity with Other Solvents 612

Short Communications

Y. Matsushima and M. Ogawa: Studies on Amino-hexoses. V. An Improved Preparation of D-Arabinose via Oxidation of D-Glucosamine. 671
H. Sano: Syntheses of New Phenylfluorone Derivatives and their Reaction with Metal Ions. 671
H. Chihara and S. Seki: Crystallization of Amorphous Nickel Sulfate..... 673
N. Yamagata and E. Tajima: Separation of a Trace Amount of Cesium from Large Amounts of Potassium or Ammonium by Coprecipitation with Thallium(I) Chloroplatinate. 674
S. Musha, M. Munemori and K. Ogawa: Photometric Determinations of Indicator End Points in Complexometric Titrations. 675
T. Amiya: Some Kinds of Reaction Behavior of Lucidusculine. 677
Y. Matunaga: Diamagnetic Susceptibility of Zinc Oxide. 677
A. Kuboyama: On the Near Ultraviolet Absorption Bands of Disulfides. 678
T. Koide, S. Takeuchi, T. Oda, Y. Yamada and I. Taguchi: An X-Ray Study on the Crystal Structure of 2-Chloro-2,3,3-trimethylbutane. 680

No. 7

General and Physical

Y. Fujitani: The Effect of Organic Vapors on the Stability of Aerosols. 683
T. Tokuda: Crystallization of Quartz at High Temperatures..... 692
N. Mataga and S. Tsuno: Hydrogen Bonding Effect on the Fluorescence of π-Electron System. III. Fluorescence Quenching of Some Nitrogen Heterocycles Caused by Hydrogen-bond Formation. 711
H. Negita, S. Satou, T. Yonezawa and K. Fukui: Studies on Carbon-Chlorine Bonds in Some Aromatic Compounds by Their Pure Quadrupole Spectra..... 721
T. Ukaji: A Study on the Molecular Structure of Acrylyl Chloride by Electron Diffraction. 737
H. Hamano: The Electronic Structure of the Hydrogen Fluoride Ion. 741
K. Ito and Shiio: Measurements of the Amounts of Bound Water by Ultrasonic Interferometer. III. Application to Organic Electrolyte..... 745
S. Sakuraba and S. Ikeya: Studies on the Mechanism of Eder's Reaction. II. On the Properties of the Active Oxalic Acid in Manganese (III and VII)-Oxalate Reaction Systems..... 748
S. Shibata: Studies on the Molecular Structure of Bisacetylacetone-Nickel (II) by Electron Diffraction. 753
K. Meguro, T. Kondo, N. Ohba, T. Ino and O. Yoda: A New Analytical Method of Electroconductivity Data of Surfactant Solutions. I. 760
S. Fujiwara and I. Yamaguchi: Proton Resonance in Oil Paraffin..... 779
K. Tyuzyo: Stoichiometric Investigations of the Liquid State. IV. Viscosity of Associated Liquid..... 782

Y. Saito, K. Nakatsu, M. Shiro and H. Kuroya: Studies on Crystals of Metallic Tris-ethylenediamine Complexes. III. The Determination of the Absolute Configuration of Optically Active Complex Ion, $[Co\,en_3]^{3+}$, by Means of X-rays. 795

Analytical and Inorganic

S. Yamada and R. Tsuchida: Spectrochemical Study of Microscopic Crystals. XV. Structure and Light Absorption of Bis-(dimethylglyoximato) gold (III) Dichloro-aurate (I). 715
S. Suzuki, K. Harimaya, M. Ueno, N.Tsuji and N. Yamaoka: Oxidimetric and Reductometric Titrations in Neutral Solutions. (Application of Sodium Triphosphate as Masking Agent to Volumetric Analysis). 766
S. Suzuki, K. Harimaya, N. Tsuji and N. Yamaoka: Determination of Sulfate by Means of Metal-Polyphosphate Reduction Method. 771
S. Suzuki, Y. Muramoto, M. Ueno and T. Sugano: Determination of Nitro Compounds with Titanium(III)-Polyphosphate Solution. (Application of Polyphosphate to Masking Volumetric Analysis). 775
H. Sano: Studies on Organic Reagents for Inorganic Analysis. II. Spectrophotometric Study on Phenylfluorone Chelates of the Fourth Group Metal Elements. 790
the late H. Naitô and K. Sugawara: A Rapid Spectrophotometric Method for Determination of a Minute Amount of Vanadium in Natural Waters. 799

Organic and Biological

Y. Kawase, Y. Fujino, Y. Ichioka and K. Fukui: The Synthesis of 4′,5,7-Trihydroxy-8-methoxyisoflavone. 689
S. Iseda: On 2-Arylaminotropones. II. Bromination of 2-Anilino- and 2-(*p*-Toluidino) tropones. 694
T. Okuda and Y. Fujii: A Simplified Method for the Preparation of *N*-Acetylphenylalanines. 698
S. Katsura, T. Moroe and N. Ikegami: Synthesis of α-and β-Thujaplicins. 700
M. Ōki and T. Sato: Estrogenic Biphenyls. II. 2′,5′-Diethyl-4-methoxybiphenyl-4′-carboxylic Acid. 702
T. Takatani: The Bond Refraction Values for Ti-O in Organic Titanates. ... 705
T. Sato and M. Ohta: Synthetic Studies of Dictamnine, an Alkaloid of *Shimmia repens*, Nakai. II. The Synthesis of Dictamnine. 708
T. Goto, K. Nakanishi and M. Ohashi: An Account on the Infrared Absorption of Guanidiniums. 723
K. Nakanishi and M. Ohashi: Confirmation of Structure of Roseonine. 725
T. Goto, Y. Hirata, the late S. Hosoya and N. Komatsu: Structure of Roseothricin A. 729
N. Ui: Sedimentation and Diffusion Studies of Calf Thymus Histone. 801
N. Ui: On the Aggregation of Calf Thymus Histone. 806
N. Ui: Electrophoretic Studies of Calf Thymus Histone. 815
N. Ui: Further Studies on the Preparation of Calf Thymus Histone. 822

Applied

Y. Tsuda and S. Mukoyama: The Formation of Cellulose IV in the Viscose Spinning. 718

No. 8

General and Physical

A. TANAKA: The Leakage Method and the Sandwich Type Zisman Method for Measurements of Contact Potential Differences between two Metals Immersed in Poorly Conductive Dielectric Liquids. 829
S. SHIBATA: Studies on the Structure of Bisacetylacetone-Nickel(II) by the X-ray Powder Method. 842
K. TYUZYO: Stoichiometric Investigations of the Liquid State. V. Vaporization Phenomenon of Associated Liquids. 851
Y. MATSUNAGA: Oxidation of Chromia Supported on Alumina. 868
H. IMAI: Reaction Rate and Electron Transfer Mechanism in Disproportionation Reaction of Uranium (V). 873
K. MEGURO, T. KONDO and N. OHBA: A New Analytical Method of Electroconductivity Data of Surfactant Solutions. II. 905
S. YAMANA: Molecular Rotations of Glucides in Relation to their Structures. III. Optical Superposition in Pentoses. 916
S. YAMANA: Molecular Rotations of Glucides in Relation to their Structures. IV. The Internal Conformation of C^6–O Bond in D-Mannopyranose and D-Glucopyranose in their Aqueous Solutions. 920

Analytical and Inorganic

H. ONISHI: Fluorometric Determination of Thallium with Rodamine B. 827
N. OHTA: Studies on Inorganic Constituents in Biological Materials. On the Inorganic Constituents in Human Stones. 833
I. IWASAKI, S. UTSUMI, K. HAGINO, T. TARUTANI and T. OZAWA: Spectrophotometric Method for the Determination of Small Amounts of Sulfate Ions. 847
S. OHASHI and H. SUGATANI: The Composition of Strong Phosphoric Acids. ... 864
S. MUTO: Analytical Studies of Boron. VI. Determination of Boron Using Ion Exchange Resin. 881
N. YAMAGATA and T. YAMAGATA: Fundamental Studies on the Biogeochemical Prospecting for Manganese. 900
N. MAKI, Y. SHIMURA and R. TSUCHIDA: Polarographic Studies of Metallic Complexes. I. Oxalato-ammine, Clycinato-ammine and Ethylenediamine-ammine Series of Cobalt(III) Complexes. 909
H. YONEDA: Absorption Spectra and Chemical Behavior of the Hexahydroxylamine Cobalt(III) Complex. 924

Organic and Biological

S. KAICHI: Hydrolysis of Carbohydrates in the Presence of Hydrochloric Acid or Acidic Ion-exchange Resins. 844
M. TANIYAMA and G. OSTER: Dye-sensitized Photopolymerization of Acrylonitrile-Vinyl Acetate Copolymers. 856
T. SATO and M. ŌKI: Estrogenic Biphenyls. III. 2-Alkyl-4-methoxybiphenyl-4'-carboxylic Acids. 859
M. KOTAKE und H. ARAKAWA: Über den Zucker des Narcissins. 862
S. AKIYOSHI and S. NAGAHAMA: Polyterpenes. I. Permanganate Oxidation of Thujopsene, Part. 1. 886
H. WATASE and I. NITTA: The Structure of Kainic Acid, the Most Active Component of Digenea simplex Ag. I. The Molecular and Crystal Structure of Zinc Kainate Dihydrate. 889

M. Miyazaki: Further Studies on the Degradation of Yeast Ribonucleic Acid by Lanthanum Hydroxide. 912
O. Shimomura, T. Goto and Y. Hirata: Crystalline Cypridina Luciferin. 929

Short Communications

M. Ebata: Tryptic Cleavage of Synthetic Poly-ε-aminocaproyl-α-amino Acids.... 934
Y. Tanizaki: The Degree of Polarization of Dichroic Polarizer of Polyvinyl Alcohol-Iodine in the Region of 240—1000 mμ. 935

No. 9

General and Physical

Y. Naito: A New Balancing Drop Method for the Determination of the Density of Heay Water. 939
K. Amaya and R. Fujishiro: Heat of Mixing of Mono- and Di-propylene Glycol with Water. 940
E. M. Khairy and M. K. Hussein: The Static Electrode Potential Behavior of Tantalum and its Behavior on Anodic Polarisation. 944
M. Nagasawa and I. Kagawa: Studies on Polyelectrolytes XXXVIII. Polyion in Simple Salt Solution. 961

Analytical and Inorganic

S. Yamada, H. Nakamura and R. Tsuchida: Spectrochemical Study of Microscopic Crystals. XVI. Structure of Cupric Formate, Acetate and Propionate. 953
E. Shimazaki, N. Matsumoto and K. Niwa: The Vapor Pressure of Germanium Dioxide. 969
T. Kiba, I. Akaza and N. Sugishita: Rapid Determination of Inorganic Sulfur in Various Forms, Particularly in Sulfide Ores, by the Tin(II)-Strong Phosphoric Acid Reduction Method. 972

Organic and Biological

M. Sato, K. Okawa and S. Akabori: A New Synthesis of Threonine. 937
T. Sato and M. Ōki: Estrogenic Biphenyls. IV. 3′-Alkyl-4-methoxybiphenyl-4′-carboxylic Acids. 958
K. Okawa: Studies on Serine Peptides. III. Synthesis of L-Seryl-L-Histidine, L-Seryl-L-Histidyl-L-Leucin and Carbobenzyloxy-Glycyl-O-Benzyl-DL-Serine Ethyl Ester. 976
M. Yamaguchi: Chemical Constitution of Renieratene. 979

Applied

T. Hashimoto: The Photochemical Degradation of 6 Nylon. I. 950

Short Communications

Y. Matsunaga: Decomposition of Aqueous Hydrogen Peroxide by Oxidized Chromia-Alumina Catalysts. 984

D

A
A

A
A
A

A

A
A

A

A

A

A

A
A
A

B

B
C
C
C
C

C

E

E

F

E
F
F
F
F
F
F

F
F
F

AUTHOR INDEX TO VOLUME 30, 1957

AKABORI, S. See SATO, M., 937.
AKAMATU, H. Organic Semiconductors with High Conductivity. II 618
AKAZA, I. (née KISHI) See KIBA, T., 482, 972.
AKIYOSHI, S. Polyterpenes. I 886
AMAYA, K. Heat of Mixing of Mono- and Di-propylene Glycol with water 940
AMIYA, T. Some Kinds of Reaction Behavior of Lucidusculine 677
ANDO, T. Benzylation of Acetylene. I 259
ANNO, T. Electronic States of para-Benzoquinone. I 168
ANNO, T. Relations among Bond Order, Force Constant and Bond Length for the C-C and C-N Bonds in Conjugated Molecules 638
AOKI, F. Rapid Analysis of Gamma-Emitters Using Gamma-Ray Scintillation Spectrometer. I 583
AOKI, K. Interaction between Surface Active Agents and Proteins. IV 53
ARAI, K. See ARAKI, C., 287.
ARAKAWA, H. See KOTAKE, M., 862.
ARAKI, C. Studies on the Chemical Constitution of Agar-agar. XX 287
BABA, H. Correlation between Two Molecular Orbital Theories on Organic Reactions. 1 147
II 154
BABA, H. See OMURA, I., 633.
CHIBA, T. See ISHIGURO, T., 25.
CHIBA, T. See MIYAGAWA, I., 218.
CHIBA, T. See MORINO, Y., 222.
CHIBA, T. Dipole Moment and Bond Character of Propargyl Halides and Mono- and Dichlorobutynes 223
CHIHARA, H. Crystallization of Amorphous Nickel Sulfate 673
EBATA, M. Tryptic Cleavage of Synthetic Poly-ε-aminocaproyl-α-amino Acids 934
EDA, B. Studies on the Intramolecular Hydrogen Bond in Conjugated Systems by the Measurements of Dipole Moments. II 164
EGAMI, F. A Simple Method of Sulfate Microdetermination 442
ERA, K. See SHIONOYA, S., 518.
FUKUI, K. See MATSUMOTO, T., 3.
FUKUI, K. See KAWASE, Y., 689.
FUKUI, K. See NEGITA, H., 721.
FUJII, N. See MATSUSHIMA, Y., 48.
FUJII, Y. See OKUDA, T., 698.
FUJIMOTO, M. Mikroanalyse mit Hilfe von Ionenaustauschharzen. IX 83
X 87
XI 93
XII 274
XIII 278
XIV 283
FUJINO, Y. See KAWASE, Y., 689.
FUJISHIRO, R. See AMAYA, K., 940.
FUJITANI, Y. The Effect of Organic Vapors on the Stability of Aerosols 683
FUJIWARA, S. Proton Resonance in Oil Paraffin 779
FURUYA, T. See MARUYAMA., 650. 657.
GEORGE, K. J. See VENUGOPALAN, M., 51.
GOTO, T. Structure of Compound A, a Hydrolysis Product of Roseothricin A 304
GOTO, T. See NAKANISHI, K., 403.
GOTO, T. An Account on the Infrared Absorption of Guanidiniums 723
GOTO, T. Structure of Roseothricin A 729
GOTO, T. See SHIMOMURA, O., 929.
GOTOH, N. See ISHIGURO, T., 25.
HAGINO, K. See IWASAKI, I., 847.
HAMANO, H. The Electronic Structure of the Hydrogen Fluoride Ion 741
HARIMAYA, K. See SUZUKI, S., 766. 771.
HASHIMOTO, T. The Photochemical Degradation of 6 Nylon. I 950
HATA, K. Catalytic Hydrogenation in Vapor Phase Using Urushibara Nickel as Catalyst 431
HATA, K. Catalytic Hydrogenation in Vapor Using Urushibara Nickel as Catalyst 431
HAYAKAWA, T. The Adsorption of Non-polar Gases on Alkali Halide Crystals. I 124
II 236
III 243
IV 332
V 337
VI 343
HIGASI, K. Ionization Potentials of Some Organic Molecules. IV 408
HIGASI, K. Dielectric Investigation on Coals II 546
IV 556
HIGASI, K. See MIYASITA, I., 513, 550.
HIGASI, K. See OMURA, I., 633.
HIGASI, Y. See HIGASI, K., 556.
HIGASHIDANI, H. See CHASHI, S., 604.
HIGUCHI, J. Primary Process in Photochemical Decomposition of AH n-Type Molecules ... 382
HIRASE, S. Studies on The Chemical Constitution of Agar-agar. XIX (Part 1) 68
(Part 2) 70
(Part 3) 75
HIRATA, Y. See GOTO, T., 304, 729.
HIRATA, Y. See SHIMOMURA, O., 929.
HIRUSAWA, Y. Neue Synthetische Methode von Tetraphenyl-Phosphoniumhalogeniden 667
HOSOYA, S. See GOTO, T., 304. 729.
HOSHINO, T. See YAMAGISHI, K., 445, 455.
HOTTA, H. Surface Chemistry of High Polymers. VII 464
ICHIOKA, Y. See KAWASE, Y., 689.
IKEDA, S. See MIYAGAWA, I., 218.
IKEGAMI, N. See KATSURA, S., 700.
IKEYA, S. See SAKURABA, S., 662. 748.
IMAI, H. Reaction Rate and Electron Transfer Mechanism in Disproportionation Reaction of Uranium (V) 873

IMAMURA, M. Irreversible Photobleaching of the Solution of Fluorescent Dyes. IV 249
INAGAKI, H. Note on the Donnan Membrane Equilibrium in Polymer Salt Solutions with Extraneous Salts 115
INANO, M. See MACHIDA, S., 201.
INO, T.See MEGURO, K., 760.
INOUE. M. See ŌSUMI, Y., 598.
INOUYE, K. Size and Structure of Commercial and Graphitized Carbon Blacks by Low-angle X-Ray Scattering and Colloid-chemical Methods 525
ISEDA, S. On Mangiferin, the Coloring Matter of Mango (Mangifera indica Linn.). IV..... 625
V 629
ISEDA, S. On 2-Arylaminotropones. II 694
ISEMURA, T. See HOTTA, H., 464.
ISHIBASHI, M. Ultraviolet Spectrophotometric Determination of Iron(III) as Chloro-complex 433
ISHIDA, K. Solvent Selectivity of Liquid Ammonia for Pure Hydrocarbons. Tie-Line Data and Comparison of Selectivity with Other Solvents 612
ISHIGURO, T. Studies on the Dipole Moments of Acenaphthene and its Derivatives 25
ITO, K. See EDA, B., 164.
ITO, K. Measurements of the Amounts of Bound Water by Ultrasonic Interferometer. III 745
ITO, M. See ANNO, T., 638.
IWASAKI, I. Spectrophotometric Method for the Determination of Small Amounts of Sulfate Ions..... 847
IWASAKI, M. The Molecular Structure of 1,2-Difluoro-1,1,2,2-tetrachloroethane 230
KAGAWA, I. See NAGASAWA, M., 961.
KAICHI, S. Hydrolysis of Carbohydrates in the Presence of Hydrochloric Acid or Acidic Ion-exchange Resines 844
KAKUTANI, Y. See URAKAMI, C., 21. 379.
KAMIYA, I. Photo-dichroism of Printed-out Silver. I 6
II 294
III 298
IV 350
KANAOKA, Y. See OMURA, I., 633.
KANDA, S. Synthesis of Co-ordination Compounds of High Molecular Weight 192
KASHIWAGI, M. Relation between Foaming Properties and the Structure of Surfactant Solution..... 193
KASHIWAGI, M. Relation between Foaming Properties and the Structure of Surface Active Substances. I 572
KATSURA, S. Synthesis of β- and γ-Thujaplicins..... 700
KATO, H. Studies on Meso-ionic Compounds. III 210
KATO, S. Studies on the Organic Phosphorescence. II..... 27
III 34
IV 38
KAWASE, Y. The Synthesis of 4',5,7-Trihydroxy-8-methoxyisoflavone 689
KHAIRY, E. M. The Static Electrode Potential Behavior of Tantalum and Its Behavior on Anodic Polarisation 944
KIBA, T. Microcolorimetric Determination of Sulfate by Reduction to Hydrogen Sulfide with Tin(II)-Strong Phosphoric Acid 44
KIBA, T. Microcolorimetric Determination of Organic Sulfur by the Tin(II)-Strong Phosphoric Acid Reduction Method 482
KIBA, T. Rapid Determination of Inorganic Sulfur in Various Forms, Particularly in Sulfide Ores by the Tin(II)-Strong Phosphoric Acid Reduction Method 972
KIMURA, K. A Tracer Study on the Penetration of a Sample Solution into Carbon Electrode of Spectrographic Analysis..... 1
KIMURA, K. See KATO, S., 38.
KIMURA, K. Studies on the Organic Reagents for the Inorganic Analysis. I 80
KINOSHITA, M. See UMEZAWA, S., 267,
KISHI, I. Present Surname AKAZA See KIBA, T., 44, 482.
KITAGAWA, T. See ISHIBASHI, M., 433.
KITAHARA, A. Determination of Critical Micelle Concentration of Detergent in Nonpolar Solvent By Ultraviolet Absorption Spectra 586
KOIDE, T. On the Crystal Structure of 2,2-Dichloro-3,3-dimethylbutane..... 198
KOIDE, T. An X-Ray Study on the Crystal Structure of 2-Chloro-2,3,3-trimethylbutane 680
KOIZUMI, M. See KATO, S., 27. 38.
KOIZUMI, M. See OBATA, H., 136. 142.
KOIZUMI, T. See TANAKA, N., 303.
KOJIMA, R. See IWASAKI, M., 230.
KOMATSU, N. See GOTO, T., 304. 729.
KOMIYAMA, Y. Structures of the Erdmann's Salt, NH_4 $[CO(NH_3)_2(NO_2)_4]$ and Some Other Related Nitro-ammine-cobalt(III) Complexes..... 13
KONDO, T. See MEGURO, K., 760. 905.
KOSHI. M. See MASAMUNE, T., 307.
KOTAKE, M. Chemical Structure of Deoxynupharidine, the Alkaloid Obtained from Nuphar Japonicum 195
KOTAKE, M. Über den Zucker des Narcissins 862
KOTERA, Y. Dependence of the Characteristics of Calcium Halophosphate Phosphors on the Conditions for Preparing Secondary Calcium Hydrogen Orthophosphate..... 191
KUBOYAMA, A. On the Near Ultraviolet Absorption Bands of Disulfides 678
KUCHITSU. K. An Electron Diffraction Investigation of the Molecular Structure of 1,4-Dichlorobutyne. I..... 391
II 399
KUGO, M. See MIYASITA, I., 550.
KURAISHI, S. See OKUMURA, S., 194.
KURIMURA, Y. See YOSHINO, Y. 563.
KURODA, H. See AKAMATU, H., 618.
KUROIWA, T. Non-Newtonian Viscosity of Dilute High Polymer Solutions. III..... 354
KUROSAWA, T. See AOKI, F., 583.
KUROYA, H. See NAKATSU, K., 158.
KUROYA, H. See SAITO, K., 795.

KUSUMOTO, S. See KOTAKE, M., 195.
MACHIDA, S. Chemical Studies on Wood Hemicelluloses. I 201
MAKI, N. Polarographic Studies of Metallic Complexes. I 909
MARUYAMA, M. Polarography of Bis(nitrophenyl) arsinic Acids 650
MARUYAMA, M. Polarography of Bis(aminophenyl) arsinic Acids, Phenylarsonic Acid and Arsanilic Acids 657
MASAMUNE, T. Molecular Compounds between Heterocyclic Compounds Containing Nitrogen 307
MASAMUNE, T. The Exhaustive Methylation of *cis*- and *trans*-Hexahydrocarbazoles 491
MASHIKO, Y. See YOSHIMOTO, T., 56.
MASUMURA, M. See CKUMURA, S., 194.
MATAGA, N. Hydrogen Bonding Effect on the Fluorescence of Some Nitrogen Heterocycles. I 368
MATAGA, N. Note on the Polymerization of Dyes in Solution 375
MATAGA, N. Hydrogen Bonding Effect on the Fluorescence of π-Electron System. III 711
MATUBARA, I. See ANNO, T., 168.
MATSUMOTO, N. See SHIMAZAKI, E., 969.
MATSUMOTO, T. Synthetic Studies on the Benzofuran Derivatives. II 3
MATSUMURA, Y. See MACHIDA, S., 201.
MATSUNAGA, Y. Magnetochemical Study of Sydnones 227
MATSUNAGA, Y. Diamagnetic Susceptibilities of Azo-derivatives of 2-Naphthol 429
MATSUNAGA, Y. Diamagnetic Susceptibility of Zinc Oxide 677
MATSUNAGA, Y. Oxidation of Chromia Supported on Alumina 868
MATSUNAGA, Y. Decomposition of Aqueous Hydrogen Peroxide Over Oxidized Chromia-Alumina Catalysts 986
MATSUNAGA, Y. See AKAMATU, H., 618.
MATSUO, H. Crystallinity Studies of Polychlorotrifluoroethylene by Infrared Method. I 593
MATSUSHIMA, Y. Studies on Amino-hexoses. IV 48
V 671
MATSUURA, T. Natural Furan Derivatives. I 430
MEGURO, K. A New Analytical Method of Electroconductivity Data of Surfactant Solutions. I 760
II 905
MIYAGAWA, I. Dipole Moments and Internal Rotation of Some Halogenated Hydrocarbons in the Vapor State 218
MIYAGAWA, I. See MORINO, Y., 222.
MIYAGAWA, I. See CHIBA, T., 223.
MIYAKE, A. Polymorphism of Bis-β-hydroxyethyl Terephthalate 361
MIYAMA, H. A Thermistor Method for the Determination of Velocity Coefficients of Vinyl Polymerization. IV 10
V 459
MIYASITA, I. Dielectric Investigation on Coals. I 513
III 550
MIYASITA, I. See HIGASI, K., 546. 556.
MIYAZAKI, M. Further Studies on the Degradation of Yeast Ribonucleic Acid by Lanthanum Hydroxide 912
MIZUNO, Y. See SHIMAMURA, O., 196.
MIZUSHIMA, W. See ANNO, T., 638.
MURATA, H. See SHIMIZU, K., 487.
MORINO, Y. Dipole Moment and Internal Rotation of 1,4-Dichloro-2-butyne in the Gaseous State 222
MORINO, Y. See MIYAGAWA, I., 218.
MORINO, Y. See CHIBA, T., 223.
MORITA, N. See SAKATA, S., 254.
MOROE, T. See KATSURA, S., 700.
MOTOKI, T. See CKUMURA, S., 194.
MUKOYAMA, S. See TSUDA, Y., 271. 718.
MUNEMORI, M. See MUSHA, S., 675.
MURAHASHI, H. See URAKAMI, C., 379.
MURAMOTO, Y. See SUZUKI, S., 775.
MUSHA, S. Photometric Determinations of Indicator End Points in Complexometric Titrations 675
MUTO, S. Analytical Studies of Boron. VI. 881
NAGAHAMA, S. See AKIYOSHI, S., 886.
NAGAO, H. See UCHIDA, M., 311. 314.
NAGASAWA, M. Studies on Polyelectrolytes. XXXVIII 961
NAGASE, S. See IWASAKI, M., 230.
NAGOYA, T. See OZAKI, S., 444.
NAITÔ, H. A Rapid Spectrophotometric Method for Determination of a Minute Amount of Vanadium in Natural Waters 799
NAITO, Y. A New Balancing Drop Method for the Determination of the Density of Heavy Water 939
NAKAMURA, H. See YAMADA, S., 647, 953.
NAKANISHI, K. Infrared Spectra of Organic Ammonium Compounds 403
NAKANISHI, K. Confirmation of Structure of Roseonine 725
NAKANISHI, K. See GOTO, T., 723.
NAKATSU, K. Studies on Crystals of Metallic Trisethylendiamine-complexes. II 158
NAKATSU, K. See SAITO, Y., 795.
NEGITA, H. Studies on Carbon-Chlorine Bonds in Some Aromatic Compounds by Their Pure Quadrupole Spectra 721
NITTA, I. See SASADA, Y., 62.
NITTA, I. See KOIDE, T., 198.
NITTA, I. See WATASE, H., 532. 889.
NISHIMURA, M. See UZUMASA, Y., 438.
NISHIMURA, S. A Method for the Preparation of the Raney Nickel Catalyst with a Greater Activity 199
NISHIO, M. Sorption of Monobasic Dye-acid by Nylon-6 Fibre 363
NIWA, K. See SHIMAZAKI, E., 969.
NODA, H. Sedimentation of Spheres in a Suspension of Finite Concentration 495
NOZOE, T. See HIGASI, K., 408.
OBATA, H. Photochemical Reactions between Methylene Blue and Tri-, Di- and Monomethylamine. I 136
II 142

ODA, T. See KOIDE, T., 198, 680.
ODA, Y. On the Distribution and Behavior of Water in Cation-Exchange Resin Membranes 213
ODAJIMA, M. See YOSHIDA, M., 197.
ODAJIMA, M. See TANAKA, K., 428.
OGAWA, M. See MATSUSHIMA, Y., 671.
OGAWA, K. See MUSHA, S., 675.
OHARA, T. See KOTAKE, M., 195.
OHASHI, S. Existence of Nitrous Oxide in Gases Produced from Nitrogen Compounds Decomposed by the Strong Phosphoric Acid-Iodic Acid Method 604
OHASHI, S. The Composition of Strong Phosphoric Acids 864
OHASHI, S. See TAKAYAMA, Y., 606.
OHASHI, M. See GOTO, T., 723.
OHASHI, M. See NAKANISHI, K., 403. 725.
OHBA, N. See MEGURO, K., 760. 905.
OHTA, M. See KATO, H., 210.
OHTA, M. See SATO, T., 708.
OHTA, N. Studies on Inorganic Constituents in Biological Materials. On the Inorganic Constituents in Human Stones 833
OKAWA, K. An Improved Synthesis of *O*-Benzyl-DL-serine 110
OKAWA, K. Studies on Serine Pepides. III.... 976
OKAWA, K. See SATO, M., 937.
ŌKAWARA, R. Cyclopolysiloxanes from Cohydrolysis of Dimethyldichlorosilane with Methyldichlorosilane and Ethyldichlorosilane 608
ŌKI, M. Estrongenic Biphenyls. I 508
II 702
ŌKI, M. See SATO, T., 859, 958.
OKU, M. See HIRUSAWA, Y., 667.
OKUDA, T. Amino Acid Synthesis from Nitromalonic Ester. II..... 358
OKUDA, T. A Simplified Method for the Preparation of N-Acetylphenylalanines..... 698
OKUMURA, S. Syntheses of Kinetin-analogs. I 194
OKUYAMA, H. See SASAKI, H., 186.
OMURA, I. See HIGASI, K., 408.
OMURA, I. Ionization Potentials of Some Organic Molecules. V 633
ONISHI, H. Photometric Determination of Thallium with Rhodamine B 567
ONISHI, H. Fluorometric Determination of Thallium with Rhodamine B 827
OSAKI, K. See WATASE, H., 532.
OSTER. G. See TANIYAMA, M., 856.
ŌSUMI, Y. Microscopic Studies on Fused Catalysts for Ammonia Synthesis. V..... 598
OZAKI, S. On the Thermal Dissociation of Organic Compounds. XII..... 444
OZAWA, T. See IWASAKI, I., 847.
OZAWA, Y. See HIGASI, K., 546.
SADÔ, A. See ANNO, T., 168, 638.
SAITO, K. See KIMURA, K., 1.
SAITO, N. On the Anion-exchange Behavior of Some Quadrivalent Actinide Elements ... 561
SAITO, S. See SASAKI, H., 186.
SAITO, Y. See KANDA, S., 192.
SAITO, Y. See NAKATSU, K., 158.
SAITO, Y. See TAKEUCHI, Y., 319.
SAITO, Y. Studies on Crystals of Metallic Tris-ethylenediamine Complexes. III..... 795
SAKAGUCHI, M. See TAKEUCHI, T., 121, 177, 182.
SAKATA, S. Relative Volatility of H_2O^{16}/H_2O^{18} and Equilibration Time for Fractional Distillation of Water 254
SAKIYAMA, M. See ŌKAWARA, R., 608.
SAKURABA, S. Studies on the Mechanism of Eder's Reaction. I 662
II 748
SANO, H. See KIMURA, K., 80.
SANO, H. Syntheses of New Phenylfluorone Derivatives and their Reaction with Metal Ions..... 671
SANO, H. Studies on Organic Reagents for Inorganic Analysis. II 790
SASADA, Y. A Refinement of the Crystal Structure of Tropolone Hydrochloride 62
SASAKI, H. The Studies on Micelles. II 186
III 326
SATO, M. A New Synthesis of Threonine ... 937
SATO, S. See HATA, K., 431.
SATO, T. Effect of the Addition of Some Carbohydrates on the Decomposition Rate of Sodium Aluminate Solutions with Seeding 477
SATO, T. Estrogenic Biphenyles. III. 859
IV. 958
SATO, T. See ŌKI, M. 508. 702.
SATO, T. Synthetic Studies of Dictamnine, an Alkaloid of Skimmia repens, Nakai. II... 708
SATOU, S. See NEGITA, H., 721.
SEKI, S. See CHIHARA, H., 673.
SEKINE, T. See KOTERA, Y., 191.
SEKINE, T. See SAITO, N., 561.
SEO. T. See UZUMASA, Y., 438.
SHIBATA, S. Studies on the Molecular Structure of Bisacetylacetone-Nickel(II) by Electron Diffraction 753
SHIBATA, S. Studies on the Structure of Bisacetylacetone-Nickel(II) by the X-Ray Powder Method..... 842
SHIGEMATSU, T. See ISHIBASHI, M., 433.
SHIIO, H. See ITO, K., 745.
SHIMADA, M. See ANNO, T., 638.
SHIMADA, R, See ANNO, T., 638.
SHIMAZAKI, E. The Vapor Pressure of Germanium Dioxde 969
SHIMIZU, K. Normal Vibrations of Tetramethylmethane and Tetramethylmethane d_{12} 487
SHIMOMURA, O. Crystalline Cypridina Luciferin 929
SHIMOZAWA, T. See MORINO, Y., 222.
SHIMOZAWA, T. See CHIBA, T., 223.
SHIMURA, Y. Absorption Spectra of Heteropolyanions. II 502
SHIMURA, Y. See MAKI, N., 909.
SHIONOYA, S. Relationships between the Photolysis and Crystallinity of Zinc Sulfide Phosphors 118
SHIONOYA, S. Sensitization by Bismuth of the Luminescence of Manganese and Samarium in Calcium Sulfide Phosphors..... 518
SHIRAI, M. Dielectric Studies on Colloidal

Solutions. III. 411
IV 542
SHIRO, M. See NAKATSU, K., 158.
SHIRO, M. See SAITO, Y., 795.
SIMAMURA, O. The Competitive Nitration of Biphenyl and Benzene by Nitric Acid in Acetic Anhydride 196
SODA, R. The Stretching Vibration of N-H Link of 2-Aminopyridine 499
SUAMI, T. Studies on Antibiotics and Related Substances. VI 537
SUGANO, T. See SUZUKI, S., 775.
SUGATANI, H. See OHASHI, S., 864.
SUGAWARA, K. See NAITÔ, H., 799.
SUGISHITA, N. See KIBA, T., 972.
SURYANARAYANA, C. V. See VENKATESAN, V. K., 97.
SUZUKI, Y. See AOKI, K., 53.
SUZUKI, S. Oxidimetric and Reductometric Titrations in Neutral Solutions. 766
SUZUKI, S. Determination of Sulfate by means of Metal-Polyphosphate Reduction Method... 771
SUZUKI, S. Determination of Nitro Compounds with Titanium(III)-Polyphosphate Solution. 775
TABUSHI, M. See ISHIBASHI, M., 433.
TAGUCHI, I. See KOIDE, T., 680.
TAJIMA, E. See YAMAGATA, N., 674.
TAKAHASHI, N. See EGAMI, F., 442.
TAKAHASHI, T. See OKUMURA, S., 194.
TAKAHASHI, U. See ŌKAWARA, R., 608.
TAKATANI, T. The Bond Refraction Values for Ti-O in Organic Titanates 705
TAKAYAMA, Y. Decomposition of Pyridine Compounds with Strong Phosphoric Acid-Iodic Acid: Some Information Obtained by Mass Spectrometry 606
TAKAYAMA, Y. See OHASHI, S., 604.
TAKEUCHI, S. See KOIDE, T., 680.
TAKEUCHI, T. Adsorption of Hydrogen on Copper-Magnesia Catalysts 121
TAKEUCHI, T. The Surface of Copper-Nickel Catalyst. I 177
II 182
TAKÉUCHI, Y. Structure of Reineckate Complex Ion 319
TAKI, S. See KIBA, T., 482.
TAKI, S. See OHASHI, S., 604.
TAMAMUSHI, B. See SHIRAI, M., 411. 542.
TANAKA, A. The Leakage Method and the Sandwich Type Zisman Method for Measurements of Contact Potential Differences between two Metals Immersed in Poorly Conductive Dielectric Liquids 829
TANAKA, K. See YOSHIDA, M., 197.
TANAKA, K. Nuclear Magnetic Resonance of Polyvinylalcohol 428
TANAKA, N. Polarographic Determinations of Minute Quantities of Lead in High-Purity Electrolytic Zinc Using the Rotated Dropping Mercury Electrode 303
TANAKA, T. See YAMAGISHI, K., 455.
TANAKA, Y. Syntheses of 3-Alkyl-naphtho(1. 2-b)furan-2-carboxylic Acids 575
TANIYAMA, M. Dye-Senstitized Photopolymerization of Acrylonitrile-Vinyl Acetate Copolymers 856
TANIZAKI, Y. The Degree of Polarization of Dichroic Polarizer of Polyvinyl Alcohol-Iodine in the Region of 240—1000 mμ 935
TARUTANI, T. See IWASAKI, I., 847.
TOKI, K. Synthesis of dl-Sarkomycin(2-Methylenecyclopentanone-3-carboxylic Acid) 450
TOKUDA, T. Crystallization of Quartz at High Temperatures 692
TOKURA, N. See ANDO, T., 259.
TSUCHIDA, R. See MAKI, N., 909.
TSUCHIDA, R. See SHIMURA, Y., 502.
TSUCHIDA, R. See YAMADA, S., 647. 715, 953.
TSUDA, Y. Effects of Mercerization on the Lateral Order Distribution of Cellulose 271
TSUDA, Y. A Phase Transition Study on the Mercerization of Cellulose 589
TSUDA, Y. The Formation of Cellulose IV in the Viscose Spinning 718
TSUJI, N. See SUZUKI, S., 766. 771.
TSUNO, S. See MATAGA, N., 368. 711.
TYUZYO, K. Stoichiometric Investigations of the Liquid State. IV 782
V 851
UCHIDA, M. Effect of Emulsifier upon the Compositions of Emulsion Copolymers of Acrylonitrile and Water-soluble Monomers 311
UCHIDA, M. Action of Emulsifier upon Compositions of Emulsion Copolymers of Acrylonitrile and Water-insoluble Monomers 314
UENO, M. See SUZUKI, S., 766. 775.
UKAJI, T. A Study on the Molecular Structure of Acrylyl Chloride by Electron Diffraction 737
UKIHASHI, H. A Study on the Electric Conductivity of Sodium Silicate Aqueous Solution. II 414
III 470
UI, N. Sedimentation and Diffusion Studies of Calf Thymus Histone 801
UI, N. On the Aggregation of Calf Thymus Histone 806
UI, N. Electrophoretic Studies of Calf Thymus Histone 815
UI, N. Further Studies on the Preparation of Calf Thymus Histone 822
UMEMOTO, S. Relation between the Contents of Radon and Radium B in Several Radioactive Mineral Springs 421
UMEZAWA, S. Studies on Antibiotics and Related Substances. V 267
UMEZAWA, S. See SUAMI, T., 537.
UTSUMI, S. See IWASAKI, I., 847.
URAKAMI, C. The Separation of α-Glycerophosphoric Acid from its β-Isomer by Paper Chromatography 21
URAKAMI, C. Separation of α-Glycerophosphate from its β-Isomer by Column Chromatography 379
URUSHIBARA, Y. See NISHIMURA, S., 199.
UZUMASA, Y. Ultraviolet Spectrophotometric Determination of Iron with Ethylenediaminetetra-acetic Acid 438
VENKATESAN, V. K. Electrochemical Study

of Ethylene Glycol-Acetic Acid System..... 97
VENUGOPALAN, M. Bromometric Oxidation of Red Phosphorus by Bromide Bromate Mixtures 51
WATANABE, K. See SHIONOYA, S., 118.
WATANABE, K., See HATA, K., 431.
WATANABE, S. See YAMAGATA, N., 577. 580.
WATASE, H. Crystal Structure of a Monoclinic Form of Naphthazarin 532
WATASE, H. The Structure of Kainic Acid, the Most Active Component of *Digenea Simplex* Ag. I 889
YAJIMA, S. See AOKI, F., 583.
YAMADA, N. Hydrogen Exchange and Isotope Effect on the Vinylation of Acetic Acid..... 263
YAMADA, S. Spectrochemical Study of Microscopic Crystals. XIV..... 647
XV 715
XVI..... 952
YAMADA, Y. See KOIDE, T., 680.
YAMAGATA, K. See YOSHIDA, M., 197.
YAMAGATA, K. See TANAKA, K., 428.
YAMAGATA, N. Coprecipitation of a Trace Amount of Cesium with Thallous Salts..... 577
YAMAGATA, N. Carrier-free Separation of Cesium from Fission Products by the Use of Coprecipitation with Thallium(I) Dipicrylaminate 580
YAMAGATA, N. Separation of a Trace Amount of Cesium from Large Amounts of Potassium or Ammonium by Coprecipitation with Thallium(I) Chloroplatinate..... 674
YAMAGATA, N. Fundamental Studies on the Biogeochemical Prospecting for Manganese 900
YAMAGATA, T. See YAMAGATA, N., 577. 900.
YAMAGISHI, K. Untersuchungen über die Photochemischen Additionsreaktionen. IV... 455
YAMAGUCHI, I. See FUJIWARA, S., 779.
YAMAMOTO, K. See HIRUSAWA, Y., 667.
YAMAGUCHI, M. On Carotenoids of a Sponge "*Reniera japonica*" 111
YAMAGUCHI, M. Chemical Constitution of Renieratene 979
YAMAMOTO, Y. See ISHIBASHI, M., 433.
YAMAOKA, N. See SUZUKI, S., 766. 771.
YAMANA, S. Molecular Rotations of Glucides in Relation to their Structures. I 203
II 207
III 916
IV 920
YAWATAYA, T. See ODA, Y. 213.
YODA, O. See MEGURO, K., 760.
YOKOI, M. Electron Diffraction Investigation on the Molecular Structures of Some Organosilicon Compounds. I 100
II 106
YONEDA, H. The Stabilities of Metal Ammine Complexes. I..... 132
YONEDA, H. The Absorption Spectra and Chemical Behavior of the Hexahydroxylamine Co(III) Complexes 924
YONEMURA, M. See KOTERA, Y., 191.
YONEZAWA, T. See NEGITA, H., 721.
YOSHIDA, M. See TANAKA, K., 428.
YOSHIDA, M. Nuclear Magnetic Resonance of Deuterated P. V. A. Films 197
YOSHIMOTO, T. Studies on Azeotropic Mixtures. II 56
III 505
YOSHINO, Y. Anion Exchange Adsorption of Some Metals from Mixed Solvents..... 563